

Estimating Energy Costs for Small Businesses in Washington

Buildings:

Energy costs for electricity, natural gas, and petroleum to heat, coal, ventilate, light and operate equipment in buildings is based on energy use estimates from the 1999 Commercial Buildings Energy Consumption Survey (CBECS) and energy prices in Washington for June 2004 and 2005. The U.S. Energy Information Administration (EIA) periodically collects commercial building characteristics, energy use, and costs for CBECS. For this analysis we used energy use per building for businesses with fewer than 5, and 5 to 9 employees for the Pacific Census sub-division (Washington, Oregon, California, Alaska, and Hawaii). This is a reasonable approximation of energy use in Washington small businesses, but we would expect businesses in California to have higher cooling loads, which could cause our energy use estimate to be a little high. Electricity, natural gas, and petroleum (distillate) prices are from EIA monthly publications for those fuels. The table below shows average energy costs. We would expect energy costs for small businesses to vary significantly depending on the type of business. Some like a small restaurant could have high energy use while a small retail store may have low energy use.

Annual Energy Costs for Buildings for Washington Small Businesses

	Fewer than 5 Employees	5 to 9 Employees	Weighted Average
June 2004 Prices	3841	6100	4605
June 2005 Prices	4167	6671	5015

Transportation:

We were not able to find data on transportation energy use for small businesses to operate cars, vans, or trucks. We would expect transportation energy use to vary significantly depending on the business. We have made a range of estimates based on different vehicle efficiencies and levels of travel. Gasoline and diesel prices are from AAA for Washington in June 2004 and 2005. Current prices are about 60 cents/gallon higher.

Annual Energy Costs for Transportation for Gasoline Fueled Vehicles

Miles/Gallon	20	15	20	15
Annual Miles	10000	10000	30000	30000
June 2004 (\$2.20/gal)	1100	1467	3300	4400
June 2004 (\$2.31/gal)	1155	1540	3465	4620

Annual Energy Costs for Transportation for Diesel Fueled Vehicles

Miles/Gallon	15	10	15	10
Annual Miles	10000	10000	30000	30000
June 2004 (\$2.23/gal)	1487	2230	4460	6690
June 2004 (\$2.46/gal)	1640	2460	4920	7380

Small Business Energy Analysis (2005)

	Energy Use		Number of Buildings	
	Fewer than 5	5 to 9	Fewer than 5	5 to 9
Employees				
Total (million Btu/bldg)	282	476	295	151
Electricity (1000 kWh/bldg)	50	71	275	144
Natural Gas (1000 cubic feet/bldg)	188	308	151	108
Total Electric (million Btu)	46915	34884		
Total Natural Gas (million Btu)	29240	34262		
Total (million Btu)	76155	69146		
per building (million Btu)	258	458		
Other Fuel (million Btu/bldg)	24	18		

Building	June 2004 Prices		June 2005 Prices	
Expenditures (\$)				
Electric	827750	615484.8	855250	635932.8
Natural Gas	238743	279750	288705.96	338294.9
Petroleum	66503	25804	85222	33067
Total	1132996	921039	1229178	1007295
per building	3841	6100	4167	6671
Weighted Average		4605		5015

Transportation

Gasoline							
Efficiency (miles/gallon)	15	15	15	20	20	20	Prices from AAA for Washington
Annual Miles	10000	20000	30000	10000	20000	30000	
2004 Annual Cost	1467	2933	4400	1100	2200	3300	2.2 June 2004 (\$/gallon)
2005 Annual Cost	1540	3080	4620	1155	2310	3465	2.31 June 2005 (\$/gallon)
Annual Cost	1920	3840	5760	1440	2880	4320	2.88 Recent (\$/gallon)
Diesel							
Efficiency (miles/gallon)	10	10	10	15	15	15	
Annual Miles	10000	20000	30000	10000	20000	30000	
2004 Annual Cost	2230	4460	6690	1487	2973	4460	2.23 June 2004 (\$/gallon)
2005 Annual Cost	2460	4920	7380	1640	3280	4920	2.46 June 2005 (\$/gallon)
Annual Cost	3080	6160	9240	2053	4107	6160	3.08 Recent (\$/gallon)